



# TORONTO: LEED<sup>®</sup> SUPPLEMENT



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## Summary Comparison

**Version 3.0 Toronto Green Standard (TGS)**  
for new Mid to High-Rise Residential and  
Non-Residential Developments  
&

**LEED<sup>®</sup> Version 4.0**  
Building Design and Construction  
(BD+C) Rating System

2019



### Purpose

This document is designed to be used in conjunction with the LEED (Leadership in Energy and Environmental Design) Building Design and Construction (BD+C) v4 Rating System. It provides information on Toronto Green Standard (TGS) version 3 (v3) requirements, policies and practices. The purpose of the Supplement is to:

- Identify those cases of selected sustainable design elements where the TGS minimum requirements contribute to LEED credits.
- Inform the design community who are familiar with LEED, or who are interested in pursuing LEED certification, of the areas of similar intent between LEED BD+C v4 and the Toronto Green Standard (TGS) v3.
- Help LEED project teams better understand how their projects may qualify for incentives from the Toronto Green Standard.

This Supplement applies to new development and construction projects covered by the Toronto Green Standard version 3 for new Mid to High-rise Residential and Non-Residential developments.

### Toronto's Sustainable Development Goal

The Toronto Green Standard is a set of performance measures for sustainable development that address the City of Toronto's environmental pressures and priorities. The Toronto Green Standard was originally adopted by City Council in 2009 and came into effect January 2010. The standard has since been updated twice in 2014 (v2) and again in 2018 (v3). The current version 3.0 contains four tiers of environmental performance including stepped energy performance targets. The basis for the TGS is the Climate Change Action Plan – an aggressive environmental framework aimed at reducing Toronto's greenhouse gas emissions by 80% by 2050 – and the Toronto Official Plan which guides land use planning decisions. There are three standards of the TGS, each relating to different building types:

- Low-Rise Residential (less than 4 storeys with a minimum of 5 dwelling units);
- Mid to High-Rise Residential & Non-Residential (4 storeys and higher); and
- City Agency, Corporation and Division Owned Facilities (non-residential development).

Tier 1 includes the minimum set of performance measures that are required by the City of Toronto and secured through the planning process. Tier 2, 3 and 4 feature voluntary, higher level environmental performance features with incentives. Site Plan applications received on or after May 1, 2018, that achieve at least Tier 2 may qualify for a Development Charge refund. Details of the TGS and how to apply for the development charge refund are available [here](#).

The Toronto Green Standard (TGS) is organized according to the City of Toronto's top five Environmental Drivers (pressures); then divided into a set of Performance Measures (e.g. Urban Heat Island Reduction, Water Efficiency). The short form of each Environmental Driver is used in naming the performance measure. For example, *SW1.1 Waste Collection & Storage*. The Environmental Drivers are:

- Air Quality (AQ)
- Energy Efficiency, GHG & Resilience (GHG)
- Water Balance, Quality & Efficiency (WQ)
- Ecology (EC)
- Solid Waste (SW)



## CaGBC's Sustainable Development Goal

### LEED v4 Building Design and Construction

LEED v4 BD+C is an international, voluntary rating system for new construction and major renovations of commercial, industrial and institutional buildings. It is an initiative of the US Green Building Council. Other LEED rating systems address other building sectors (such as homes, commercial interiors, and existing buildings). Details of the rating system are available [here](#).

The rating system is structured into a set of prerequisites and credits. Points are awarded for meeting the requirements of the credits, and the total of the points earned determines the overall certification level achieved (Certified, Silver, Gold or Platinum). LEED credits are similar in function to TGS Performance Measures; however, the LEED rating system covers a wider range of possible credits. LEED credits and prerequisites are organized into 9 groups. The short form of each is used in naming the prerequisites (P) and credits (C). For example, *MRp1 Storage and Collection of Recyclables*. The groups are:

- Integrative Process (IP)
- Location and Transportation (LT)
- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy and Atmosphere (EA)
- Materials and Resources (MR)
- Indoor Environmental Quality (IEQ)
- Innovation in Design (ID)
- Regional Priority (RP)

### Zero Carbon Building Standard

The CaGBC's Zero Carbon Building (ZCB) Standard is another voluntary certification for New construction, major renovations and existing buildings. The key components of the ZCB Standard are:

1. Zero Carbon Balance
2. Efficiency
3. Renewable Energy
4. Low-Carbon Materials

New construction and major renovation projects can earn a ZCB-Design certification by modeling a zero carbon balance, highly efficient envelope and ventilation systems, and onsite renewable energy systems. Occupied buildings can achieve a ZCB-Performance certification by demonstrating a zero carbon balance over a 12-month operating period. Details of the ZCB program are available [here](#).

### Overview of Similarities and Differences

The LEED BD+C v4 rating system and the TGS v3 are complementary and share many objectives. A number of TGS performance measures and LEED v4 credits and prerequisites overlap in design intent.



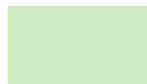
This document includes three summary comparison tables, as described below.

**Table 1: Tier 1 vs. LEED v4** Comparison of all TGS Tier 1 mandatory performance measure requirements and corresponding LEED BD+C v4 credits and prerequisites.

**Table 2: Tier 2+ vs. LEED v4** Comparison of all TGS Tier 2, 3 and 4 Core and Optional, voluntary performance measure requirements and corresponding LEED BD+C v4 credits and prerequisites.

**Table 3: TGS Low-Carbon Pathway vs. ZCB Standard** Comparison of TGS Tier 3 or 4 performance measure GHG1.3 *High Performance, Low Carbon Pathway* to the Zero Carbon Building Standard (Design Certification).

### Terminology



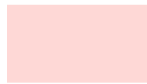
*LEED Additional Requirement.* The corresponding TGS performance measure contributes, but does not entirely meet the requirements of the LEED BD+C v4 credit or prerequisite.



*TGS Additional Requirement.* The corresponding LEED BD+C v4 credit or prerequisite contributes, but does not entirely meet the requirements of the TGS performance measure.



*Exclusive to TGS.* There is no corresponding LEED BD+C v4 credit or prerequisite.



*LEED Documentation Accepted for TGS Submission.* TGS performance measure and corresponding LEED BD+C v4 credit requirements and documentation are very similar, allowing an exchange of LEED submittals<sup>1</sup>.

**TABLE 1: Comparison of LEED v4 credits and TGS Tier 1 Performance Measures**

TGS v3 Tier 1 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement
AQ 1.1 Single-Occupant Auto Vehicle Trips	LT Access to Quality Transit, Bicycle Facilities, Reduced Parking Footprint		√	√
AQ 1.2 LEV and Sustainable Mobility Spaces	LT Green Vehicles (Option 1) and Reduced Parking Footprint		√	√
AQ 1.3 Electric Vehicle Infrastructure	LT Green Vehicles: Option 1		√	

<sup>1</sup> Refer to the TGS v3 Tier 2 credit Declaration Templates and City of Toronto TGS v3 website for further details on accepted LEED BD+C v4 documentation.



TGS v3 Tier 1 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement
AQ 2.1 Bicycle Parking Rates	LT Bicycle Facilities		√	√
AQ 2.2 Long-term Bicycle Parking Location	LT Bicycle Facilities		√	√
AQ 2.3 Short-term Bicycle Parking Location	LT Bicycle Facilities			√
AQ 2.4 Shower & Change Facilities	LT Bicycle Facilities			√
AQ 3.1 Connectivity	LT Access to Quality Transit		√	√
AQ 3.2 Sidewalk Space		√		
AQ 3.3 Weather Protection		√		
AQ 3.4 Pedestrian Specific Lighting		√		
AQ 4.1 UHI Non-roof Hardscape (All building types, Combination)	SS Heat Island Reduction (Option 1)		√	√
AQ 4.1 UHI Non-roof Hardscape (Non-residential use, Parking Undercover)	SS Heat Island Reduction (Option 2)		√	√
AQ 4.2 Green & Cool Roofs	SS Heat Island Reduction (Option 1)		√	√
GHG 1.1 Buildings Energy Performance	EA Optimize Energy Performance		√	√
WQ 1.1 Erosion & Sediment Control	SS Construction Activity Pollution Prevention			√
WQ 2.1 Stormwater Retention & Reuse	SS Rainwater Management (Option 1)			√
WQ 3.1 Total Suspended Solids (TSS)		√		
WQ 3.2 E. Coli Reduction		√		
WQ 4.1 Drought-Tolerant Landscapes	WE Prerequisite Outdoor Water Use Reduction (Option 1)			√
EC 1.1 Tree Planting Areas and Soil Volume		√		
EC 1.2 Trees Along Street Frontages		√		



TGS v3 Tier 1 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement
EC 1.3 Parking Lots		√		
EC 1.4 Watering Program	WE Prerequisite Outdoor Water Use Reduction (Option 1)			√
EC 2.1 Ravine and Natural Feature Protected Areas and Natural Heritage System		√		
EC 2.2 Ravine and Protected Areas Buffers		√		
EC 3.1 Native Species and Pollinator Supportive Species	SS Site Development - Protect or Restore Habitat (Option 1)		√	√
EC 3.2 Invasive Species		√		
EC 4.1 Bird Friendly Glazing	ID Pilot Credit: Bird Collision Deterrence		√	√
EC 4.2 Rooftop Vegetation		√		
EC 4.3 Grate Porosity		√		
EC 5.1 Exterior Lighting	SS Light Pollution Reduction		√	√
SW 1.1 Waste Collection & Storage		√		
SW 1.2 Waste Storage Space	MR Storage and Collection of Recyclables		√	√
SW 1.3 Bulky Waste		√		
SW 1.4 Compaction		√		
SW 3.1 Construction Waste Management		√		



**TABLE 2: Comparison of LEED v4 Credits and TGS Tier 2, 3 and 4 Core and Optional Performance Measures**

TGS v3 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement	LEED Documentation Accepted for TGS Submission
<b>TIER 2 CORE</b>					
AQ 4.3 UHI Non-roof Hardscape	SS Heat Island Reduction (Option 2)		√	√	
GHG1.2 Advanced Buildings Energy Performance	EA Optimize Energy Performance		√	√	
GHG2.1 Solar Readiness	EA Renewable Energy Production		√	√	
GHG3.1 District Energy Connection		√			
GHG4.1 Benchmarking & Reporting	EA Building-Level Energy Metering		√	√	
GHG4.2 Best Practice Commissioning	EA Fundamental Commissioning and Verification				√
GHG4.3 Air Tightness Testing		√			
GHG5.1 Resilience Planning		√			
WQ2.2 Advanced Stormwater Retention & Reuse	SS Rainwater Management (Option 1)		√	√	
WQ4.2 Water Efficient Fixtures	WE Indoor Water Use Reduction (40% reduction)				√
WQ4.3 Irrigation	WE Outdoor Water Use Reduction (Option 2)		√	√	√
EC5.2 Exterior Lighting	SS Light Pollution Reduction		√	√	
EC5.3 Lighting Controls	SS Light Pollution Reduction		√	√	
SW1.6 Household Hazardous Waste	MR Storage and Collection of Recyclables				√
SW3.1 Construction Waste	Construction and Demolition Waste Management: Option 1 (75% reduction)				√



TGS v3 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement	LEED Documentation Accepted for TGS Submission
<b>TIER 3 &amp; 4 CORE</b>					
GHG1.3 High Performance, Low Carbon Pathway	EA Optimize Energy Performance		√		
WQ2.3 High Performance Stormwater Retention & Reuse	SS Rainwater Management (Option 1)		√		
WQ4.4 Advanced Water Efficient Fixtures	WE Indoor Water Use Reduction (50% reduction)				√
SW3.2 Construction Waste	Construction and Demolition Waste Management: Option 1 (95% reduction)				√
<b>TIER 2 OPTIONAL</b>					
AQ1.4 Single-Occupant Auto Vehicle Trips	LT Access to Quality Transit, Bicycle Facilities, Reduced Parking Footprint		√	√	
AQ1.5 Electric Vehicle Infrastructure	LT Green Vehicles: Option 1		√		
AQ2.5 Enhanced Bicycle Parking	LT Bicycle Facilities		√	√	
AQ2.6 Publicly Accessible Bicycle Parking	LT Bicycle Facilities		√	√	
AQ2.7 Bike Share		√			
GHG2.2 On-Site Renewable Energy	EA Renewable Energy Production		√	√	
GHG4.4 Submetering	EA Energy Metering (Building-Level and Advanced)		√	√	
GHG5.2 Refuge Area and Back-Up Power Generation	ID Pilot Credit: Passive Survivability and Back-up Power During Disruptions		√	√	
EC1.5 Enhanced trees in parking lots		√			
EC1.6 Enhanced Tree Planting and Soil Volume		√			
EC1.7 Tree Protection During Construction		√			
EC3.3 Restoration of Biodiversity and Pollinator Habitat	SS Site Development - Protect or Restore Habitat (Option 1)		√		√
EC3.4 Biodiverse Green Roofs for Pollinators		√			





TGS v3 Performance Measure	LEED v4 Credit	Exclusive to TGS	TGS Additional Requirement	LEED Additional Requirement	LEED Documentation Accepted for TGS Submission
EC4.4 Enhanced Bird Friendly Glazing	ID Pilot Credit: Bird Collision Deterrence		√	√	
SW1.5 In-suite Waste Storage Space		√			
SW2.1 Building Lifecycle Impact Reduction	MR Building LCA (Option 3, 50% threshold)				√
SW4.1 Sustainable Building Materials	MR BPDO - Sourcing of Raw Materials (Option 2)				√

**TABLE 3: Comparison of TGS Tier 3 or 4 Performance Measure GHG1.3 High Performance, Low Carbon Pathway and ZCB Standard (Design Certification)**

Energy Performance Metric	ZCB Standard (Design Certification)	TGS v3 Tier 3 or 4 Low Carbon Pathway
Zero Carbon Balance	YES	GHGI - 3-10 kg/m <sup>2</sup>
Install Onsite Renewable Energy	YES	YES*
Thermal Energy Demand Intensity (TEDI) Target	32 KWh/m <sup>2</sup>	15-30 KWh/m <sup>2</sup>
Energy Use Intensity (EUI) Target	NO	65-100 KWh/m <sup>2</sup>
Embodied carbon of materials	Whole building life-cycle assessment	NO

\* Optional TGS Tier 2 performance measure

**Created By**

WSP Canada Inc. developed this document in consultation with the City Planning Division at the City of Toronto and the Canada Green Building Council.

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